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December 6, 1994

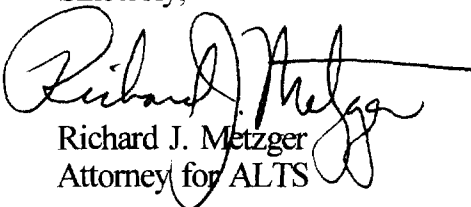
Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C.

Re: **Ex Parte Written Presentation in Price Cap Performance
Review for Local Exchange Carriers – CC Docket No 94-1**

Dear Mr. Caton:

The attached written presentation was delivered today to Mr. James W. Olson, Chief, Competition Division of the Office of the General Counsel. Two copies of this letter are being submitted for inclusion in the file.

Sincerely,


Richard J. Metzger
Attorney for ALTS

cc: J. Olson

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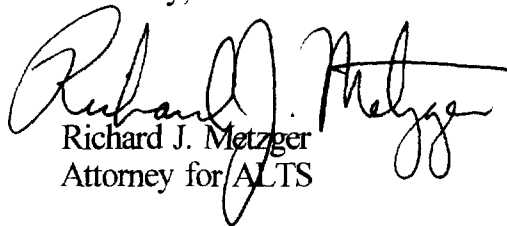
Mr. James W. Olson
Chief, Competition Division, Office of the General Counsel
Federal Communications Commission
2033 M Street, N.W., Suite 500
Washington, D.C.

Re: **Ex Parte Written Presentation in Price Cap Performance
Review for Local Exchange Carriers – CC Docket No 94-1**

Dear Mr. Olson:

Attached is the portion of the New York Public Service Commission's Staff Report, The Level Playing Field: An Interim Report, which deals with number portability. While ALTS does not necessarily agree with every aspect of the Staff's conclusions, this does provide a useful introduction into various "interim" number portability approaches.

Sincerely,


Richard J. Metzger
Attorney for ALTS

Case 94-C-0095

Numbering Issues

Number Portability

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Issue

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

While no telephone subscriber can claim "ownership" of his or her telephone number, the fact is that subscribers everywhere behave as if they "own" their numbers. Many residence customers retain the same telephone number for years; it is distributed to most entities with which they interact, such as banks, insurance and credit card companies, merchants and neighbors, friends and associates. For business people, the welfare and economic viability of their company is often irrevocably intertwined with their telephone numbers; it is printed on their stationary and in their ads, and it is the easiest and quickest way of reaching them. A change in telephone number can be a very real hardship for any businessperson--if you don't know how to reach them, you can't do business with them.

In the past, number changes have not been a particular problem unless it became necessary to change physical location. Only one company was providing you with your local loop, and, as long as you stayed in the same place, you could keep your number almost indefinitely. Today, telephone customers across the state are beginning to have choices with

regard to the provision of local telephone service; local exchange service providers are entering the marketplace in most major cities, in direct competition with incumbent local exchange carriers. The ability of new entrants to compete with the incumbent for the same customers raises many questions heretofore unaddressed by the Commission. One issue raised by all new entrants, in many forums, is the issue of telephone number portability: the ability to retain an existing telephone number when and if you change to a competing local service provider. Number portability, effectively, transfers "ownership" of the telephone number from the telephone company to the individual customer.

If it is necessary for any customer, particularly a business customer who has had his or her number for any length of time, to change that number in order to choose an alternate local exchange service provider, that customer may be less apt to choose the competing local carrier, even though the competing carrier may offer a wider range of services, in a more efficient and less costly manner. In other words, the advertising dollars invested in a particular telephone number could provide a strong disincentive to a number (and, therefore, service provider) change.

Therefore, the issue of number portability between service providers is important, not only to the customer who already

has telephone service, but to the companies who will be competing with incumbent local exchange carriers for that customer.^{1/} This issue is, in fact, analogous to the situation of several years ago, when interexchange carriers demanded the ability to compete with AT&T on an equal access basis. The parties agree that number portability between service providers is essential to local loop competition. However, the form, manner, and timing of its provision is not clear to anyone. Some of the questions that require answers before the barriers that exist to the timely provision of number portability are removed are:

- What is the best architecture to use to accomplish number portability?
- Can it be made "seamless" to the end user and can overall call quality and performance be preserved?
- Are so-called "interim" solutions such as Call Forwarding and DID trunking acceptable on a long term basis?

^{1/} There is another type of number portability, called "location portability," which permits a subscriber to retain his or her existing telephone number after a change in physical location. This type of number portability is generally viewed by the industry to be of less significance to the issue of local exchange competition than number portability between service providers. To us, number portability has the latter meaning.

- Is number portability strictly a national issue, or can we begin to resolve it on a state or regional basis?
- What level of number portability is feasible: home region, NPA, state or national?
- What are the costs associated with the various levels of number portability?
- Who pays?
- How can the disincentives of the incumbent local exchange carrier be overcome?
- Should number portability concepts encompass the residence market as well as business?

Background

Traditionally, telephone numbers have been identified with a specific central office in a specific geographic area, rather than with the individual or business which subscribed to that number. This permitted a call to be routed through the public switched network to its final geographic destination. Since there was no competition for local dialtone, number portability was not a big issue; the expectation was that if you changed your address, it might be necessary to change your number, but that's as far as it went.

With the advent of cellular and paging companies, however, the NXX code began to be used to identify the specific service provider to whom calls should be routed. Today, with real competition for the local telephone loop, rigid adherence to even company-specific NXX routing makes it that much more difficult for local competitors to attract new customers if those customers must change their numbers to a new entrant-specific NXX code. Thousands of dollars invested in years of advertising and promoting a specific number could be lost. On the national level, the transition to 800 number portability provided transparency to end users, yet allowed 800 customers to change service providers without economic penalty. Local loop competitors press the analogy: telephone numbers must become customer rather than company-specific to allow real competition.

Access to number resources has been addressed by the Commission, which recently allowed direct assignment of company-specific NXX codes to competing carriers such as MFS and Teleport, and several additional code assignments are pending.^{1/} This order also provided the foundation for seamless interconnections (i.e., transparent to customers) among the different carriers' local networks.

^{1/} See introduction to this section.

The issue of number portability is being addressed by the Industry Carriers Compatibility Forum's (ICCF) Number Portability Workshop on a national level. The mission of this group is to encourage the telecommunications industry, as a whole, to identify and explore national technical issues, including overall feasibility, end user and service impacts, the timing of various number portability solutions, and to examine the relative costs and benefits of the solutions that are developed.

In this proceeding, the parties were asked to consider:

How can number portability between carriers be most expeditiously and economically effected--for portability within the state, within an NPA, or within a central office district?^{1/}

Forms of number portability exist today; Remote Call Forwarding and DID trunking are interim solutions that are considered cumbersome, costly and ultimately unsatisfactory if one's purpose is to provide a choice of telephone service providers which is truly transparent to the end user. Long term solutions pose technological and cost issues.

^{1/} Case 94-C-0095, Telephone Competition II, Order Instituting Proceeding, (issued February 10, 1994), p. 11.

Options**Interim Solutions**

- **Remote Call Forwarding:** This tariffed service allows calls placed to a telephone number to be forwarded to another number. This service was originally intended to supplant Foreign Exchange service and is priced accordingly; there is a monthly rate plus a per minute charge for each call forwarded.
- **Direct-Inward Dialing (DID):** DID, mainly used by PBXs, allows an incoming call from the network to reach a specific station line without an attendant (operator) assistance. To effectuate number portability, the call is delivered via DID trunks to the terminating carrier's switch for processing. Since DID is normally provisioned in groups of 20 numbers, local exchange carrier policies would have to be changed to allow a single number to be identified as a DID number. This arrangement has been called flexible DID, or Flex-DID.
- **Tandem/Route Indexing** - This method, a combination of call forwarding and DID, uses a tandem switch or other designated "hub" to route calls for "portable" numbers. The central office switch to which the number is

assigned uses translations to identify the call as belonging to another carrier. The number is prefixed with a unique routing code which the tandem or hub uses to identify which carrier should receive the call. The new local exchange carrier switch then translates the call to its customer (or much like) as the Flex-DID option.

Long-term Solutions

Long-term solutions, commonly referred to as "true number portability" (because, by not relying on the local exchange carriers to forward calls, they treat competitors equally), involve the use of database technology and Signalling System 7 akin to the methods pioneered with 800 number portability and the Advanced Intelligent Network (AIN) capabilities which allow call processing to be halted based on defined trigger-points. Three proposed methods that are currently being discussed and refined nationally follow this basic paradigm:

1. The calling party places a call.
2. A "trigger" based on the NPA-NXX results in a query to a database which includes the dialed number.
3. The database determines the service provider of the number.

4. The service provider ID is passed to the switch that launched the query.
5. The dialed number and the service provider ID are used to terminate the call.

Discussions revolve around where and which entity makes the database query (data dip):

- **Originating end data dip** - The originating central office makes the data dip to determine call routing.
- **Next-to-last carrier data dip** - The next-to-last carrier in the call progression would make the dip. On an intraLATA call involving two carriers (say incumbent local exchange carrier to new entrant), the originating central office would make the dip. On interLATA toll calls (local exchange carrier-interexchange carrier-new local exchange carrier), the interexchange carrier would make the dip.
- **Terminating end data dip** - The assignee of the NXX makes the data dip to determine call routing.

Discussion**Interim Solutions**

The advantages of the interim solutions is that each method is currently available with existing technologies. No major changes are necessary to the existing local exchange carrier networks since Remote Call Forwarding and DID are available. Telephone numbers that need to be "ported" (transferred to another carrier) are simply identified by the competing carrier which arranges with the local exchange carrier to take advantage of either Remote Call Forwarding or DID.

Flex DID may require minor modifications in operation and technical procedures. Flex DID has been determined to be technically feasible by Bell Atlantic - Maryland in its discussions with MFS-Intellinet.^{1/} Flex-DID would operate using Multi-Frequency and possibly could be arranged for SS7 signalling. The use of SS7 signalling would allow some feature functionality (e.g., CLASS services).

Tandem/Route indexing, although requiring some technical modifications, would also allow transmission of some features

^{1/} Public Service Commission of Maryland - Order No. 71155
- In the Matter of MFS Intellenet of Maryland for authority to provide and resell local exchange service, et al.

and functionalities (e.g., ANI and, if SS7 were used, the calling party number). This method also allows interconnection by multiple competing carriers at either the end office or tandem level.

Interim Solutions

There are disadvantages inherent in any of the interim solutions. Both Remote Call Forwarding and DID, as currently provisioned, do not provide network signalling and other information, such as the Call ID and ANI, to the other carrier. Neither method is suited for data transmission. Both add additional levels of switching and transport when more efficient connections could be made; for example, a direct connection from an interexchange carrier to a new local exchange carrier on a interLATA call is precluded by these methods. These solutions may impair the quality of service, increase call set-up time and limit feature functionality. The DID solution would require new local exchange carriers to interconnect at each local exchange carrier end office where portability is sought, adding to the new local exchange carrier's cost.

The Remote Call Forwarding solution also involves the use of two telephone numbers - one retained at the local exchange

carrier switch and the one assigned at the competing carrier's switch. The use of two telephone numbers is a problem since continued telephone number assignments is inconsistent with the overall national effort to conserve numbering resources and avoid costly area code splits.^{1/} This is of particular concern in the Metro LATA where numbers are expected to be used up in the 212 NPA by 2001 and in the 718 LATA by 2005. Large-scale demand for number portability can only exacerbate the problem. Therefore, any solution applied to the Metro LATA must consider this concern.

Finally, all three interim methods raise concerns over continued dependence on local exchange carrier networks for call routing. Interexchange carrier to new local exchange carrier, new local exchange carrier to new local exchange carrier, and intra-new local exchange carrier calls where portable numbers are involved must all route through the local exchange carrier network.^{2/} Not only is this method inefficient, it affects the flow of access charges on calls terminated from interexchange carriers. (This aspect will be discussed later in the document.)

^{1/} BOC Notes on the LEC Networks - 1994 - Section 3.5.4 - Code Conservation and Relief.

^{2/} Calls within a new entrant's network may be handled without LEC intervention, if the company can build the necessary translations in its switching network.

Two proposals have been presented in other forums for dealing with requests for interim forms of portability:

- Rochester Telephone has proposed in its Open Market Plan to offer interim local number portability that requires competing carriers to be interconnected at each central office where portability is sought. Rochester will use either Remote Call Forwarding, DID, or other means to effect portability. No charge will be imposed on the number being forwarded, but an annual surcharge on ALL Rochester-assigned numbers will be assessed based on a formula. The charge will be computed as the product of minutes of calls forwarded and the incremental cost of switching.^{1/} Rochester will absorb the first \$1 million of costs so computed; thereafter, the surcharge will be imposed proportionality to the Rochester numbers used by Rochester and other carriers.^{2/} New local exchange carriers are required to arrange for transport facilities to the central office where portability is sought.

^{1/} The industries incremental cost is generally estimated to be between 0.5¢ and 0.6¢.

^{2/} For example, assuming 10,000 Rochester-assigned numbers are being used, 2,500 by another carrier and 7,500 by Rochester, the surcharge would be assessed 25% (2,500/10,000) to the other carrier and 75% to Rochester.

- NYT offers a tariffed service called Wire Center Number Retention Service (WCNRS). Individual Message Business Line customers can subscribe to WCNRS in order to keep the same number (within the same wire center) when switching to NYT Centrex or Intellipath service, which normally requires a number change. NYT could extend a similar service offering to other carriers.

Both plans attempt to address the question of cost responsibility. While the NYT plan allows portability for specific numbers in specified areas, the Rochester proposal applies to its entire territory. There is merit to the latter since, theoretically, both customers and carriers will be receiving the benefits of competition and, therefore, should be willing to share in the costs. Having only the customer or carrier whose number is retained pay for portability defeats its purpose since this is not far removed from the existing arrangement of tariffed Remote Call Forwarding service.^{1/} Conversely, requiring the incumbent local exchange carrier to "eat" the entire cost of the interim solution for the benefit of the competing carriers penalizes the incumbent ratepayers. Implementation of the Rochester model in other areas could be done by designating

^{1/} Remote Call Forwarding is expensive. For example, NYT currently charges a monthly rate of \$19.88 plus message units or toll charges for each call forwarded. Based on Rochester's estimates, the actual cost may be far lower.

regions in which new local exchange carriers intend to offer service as "portable areas." In addition, new local exchange carriers should reciprocate by offering portability to the incumbents, as well. The surcharge would then be assessed against the local exchange carriers telephone numbers in those portable areas.

The question of how access charges would be handled under any interim arrangement has been raised. It would appear that since the local exchange carrier incurs costs for carrying and switching the call to its central office where the number resides, access charges from the interexchange carrier should be retained by the local exchange carrier. One local exchange carrier would then be compensated by the other local exchange carrier via the local terminating access charges arrangement, as proposed in the intercarrier compensation section, for the portion of the call that it carries. While this compensation method may be unpalatable to some parties, it reflects a proper reimbursement for the costs each company incurs on the call. It is acknowledged that this arrangement disappears under "true" number portability, where the interexchange carrier is able to route directly to a new local exchange carrier.

Long-term Solutions

While the interim solutions make use of existing network services, the long-term solutions consider network capabilities. The advantages of using database technology are similar to the benefits seen in the transition to 800 number portability such as transparency to end users and 800 customers and rapid changes of service providers upon customer request. 800 numbers, no longer bound by the NPA-NXX assignees, have become the customer's property, not the carriers (although many point out that no one "owns" the numbers).

The three options involving a database dip which have been presented to date in the national ICCF Number Portability Workshop seek to promote efficient and seamless integration of multiple carriers. Each option has advantages and disadvantages associated with it; while each is by no means a definitive list, it represents the current thinking of the industry.^{1/}

^{1/} The national effort is analyzing all forms of portability: service provider, service, and location. Therefore, judgement as to which architecture is best will be influenced by these considerations.

Comparison of proposed architectures - Preliminary view

Data Dip	Advantages	Disadvantages
Terminating	Minimizes modifications	Inefficient routings
	Not all calls need to be dipped	Unnecessary middleman for calls not involving NXX assignee
	Other carriers route via NPA-NXX	Precludes direct IXC trunking
	Fewer standard changes	NXX assignee may change in time, leaving "who dips" up in air
	Can be introduced to specific areas	
Originating	Network inefficiencies minimized	All switches must be "dip-capable"
	Allows transition to location portability	Requires standards changes
	Minimizes call set-up time	Dips required even when not necessary
		Double dipping likely (LEC and IXC)
Next-to-last Carrier	Permits direct trunking by IXC	Does not anticipate demise of LATA boundaries
	Can be limited to specific areas	Requires more carriers to be able to dip
	Minimizes call set-up time	

Regardless of the method chosen, most parties agree that the solution will not come cheaply. All currently discussed architectures involve significant costs - database deployment, service management system (SMS) deployment, new technical standards, increased network loads, network routing changes, etc. All proposed architectures require deployment of the Advanced Intelligent Network, which most local

exchange carriers in New York do not currently have and which they do not plan on deploying generally over the next three years.^{1/} The database solution has been estimated to be at least two to five years away from any large-scale availability. Nonetheless, New York is poised for competition.

None of these long-term solutions have been attempted nor has anyone determined and compared the costs for each method. Nationally, the industry is far from agreement on which is the best alternative (and possibly more architectures will be presented and discussed), and it may be premature to formally endorse one methodology over another. ~~The next-to-last~~ carrier data dip, however, may hold the most promise for implementation within a defined geographic area without affecting other areas of the country that do not have a demand for number portability. Unlike the originating-end data dip, which requires nearly all switches in the nation to be modified before portability becomes available, and the terminating-end datadip, which introduces network inefficiencies, the next-to-last carrier data dip appears to strike a balance that allows participation by local exchange carriers, competing carriers, and interexchange carriers within designated LATAs where portable NXXs reside.

The Commission should encourage a trial, limited to specific geographic regions to gain information (such as cost data, load on the SS7 network, operational difficulties, and customer demand) on this method.

^{1/} NYT is currently experimenting with AIN in one central office. Additional deployment is contingent on the results of this trial.

Although a trial will take time to establish, review, and implement on a large-scale basis, local loop competition already exists in the major metropolitan area in the country, and is poised to become available in other major markets in the state. Almost everyone agrees that some form of number portability should be available in the immediate future. New entrants have acknowledged that the interim solutions, while far from perfect, may work on a limited basis (certainly before the majority of customers in the state have competitive choices), and may support immediate needs. A trial of more long-term solutions may provide the answers we need to determine whether "true" number portability is viable in New York.

Some have questioned whether there is a sufficient incentive to the local exchange carriers to investigate and deploy any long-term solution since the likely outcome will be of little or no benefit to them.^{1/} Others have gone so far as to suggest that ~~penalties~~ be assessed to the local exchange carrier if the long-term solution is not deployed by a given date. This may be ~~too harsh~~ since competitors acknowledge that the full costs have not been examined. It has also been acknowledged that designing and building a database environment is not a local exchange carrier service; any carrier could do it.^{2/} Therefore, a carrier or a consortium of carriers could deploy the local or regional databases. A New York State trial could also forge new ground for meeting these goals and testing this assumption.

^{1/} Increased regulatory flexibility is a possible motivator; displeasure with certain aspects of the interim solutions may be another.

^{2/} For example, the national 800 database is managed by Lockheed; regional databases are managed by local exchange carriers and other consortia.

Public Involvement Process

As an additional indicator for determining customer demand, the Commission would benefit from public input on this issue. Although industry participants in this proceeding to date unanimously appear to agree that number portability is essential for competition, the consumer's voice has not yet been heard. In an effort to seek public input in the area of competition at the local exchange level, a Public Involvement Process (PIP) was designed to educate consumers and to ask them questions related to the benefits of and the requirements for achieving number portability. Members of the general public, consumer leaders, representatives of small business, and advocates of the low income and disabled sectors are being invited to participate in a video-conference forum to be held in major regions around the state.

As part of the PIP, it is expected that consumer opinion will be sought on a variety of issues related to the ability of consumers to purchase telecommunications services from alternative providers. To the extent that number portability, in some form, is a prerequisite to effecting customer choice, the PIP process will seek consumer input on related issues such as price, convenience, service quality, and service availability. The PIP will also seek to determine the importance of location portability as well as service provider portability.

These important areas of inquiry will be pursued with customers:

1. If it were possible to choose from any number of carriers who could provide you with local service,

would you be willing to pay to maintain your current telephone number?

2. If a competing carrier offered comparable or better services at a lower price than the existing telephone company but a number change was required, would you be willing to switch carriers?
3. Considering your own specific needs, is it important for you as a residential or small business customer to keep your current telephone number if you move across town/across the state/or across the nation?
4. Would you be willing to pay to retain your telephone number if you moved across that state/or across the nation?

Answers to these questions will assist the Commission in making its ultimate decision regarding the importance of number portability to the consumers in New York.

Recommendations

We recognize the need for an integrated, industry-wide resolution of the issues surrounding number portability, that the current number portability options are not satisfactory to most new carriers entering local loop competition, and that some handle must be obtained on the cost to provide "true" local number portability. There is a concerted effort on the national level to deal with this issue, in which virtually all segments of the telephone industry are participating. However, since local competition is a reality

here in New York, there may be a need to address the issue on a smaller scale (either on a statewide basis or by numbering plan area) and to arrive at a meaningful solution that is independent of, though wholly compatible with, the effort regarding number portability that is underway on the national level (which we are supporting and actively participating in).

We recommend that the Commission:

- Establish a trial as soon as possible, but in no event later than **January 1, 1996**, using the next-to-last carrier architecture that will examine the viability of service provider portability in a multi-carrier environment. It is strongly recommended that new entrants participate in the creation of the trial's framework and operation, and that new entrants be required to contribute to the costs associated with the trial. A central office district within the New York Metro LATA, where several carriers have established a presence, should be considered as a trial site. Trials in other local exchange carrier territories should also be encouraged. Parties interested in participating in a trial are invited to identify themselves to all parties in this proceeding as well as to Commission staff within 30 days of issuance of this interim report.
- ~~Implement~~ the Rochester proposal, as modified here to include reciprocal portability among all carriers as an interim solution. While none of the interim solutions to achieve number portability which are outlined in this report are ideal, the Rochester proposal strikes a reasonable balance between the utilization of existing technologies and the sharing of costs. However, parties

should not be constrained from exploring any of the other options, as an interim solution.

- Encourage parties not presently doing so to participate in the national ICCF Number Portability Forum, in which staff intends to continue to participate. New local exchange carriers intending to avail themselves of number portability would greatly benefit.
- Evaluate the PIP process and its results with respect to this issue.